

2N5058  
2N5059

SILICON  
NPN TRANSISTORS



TO-39 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5058 and 2N5059 are silicon NPN epitaxial planar transistors designed for high voltage general purpose amplifier applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Collector-Base Voltage	$V_{CB0}$	300	250	V
Collector-Emitter Voltage	$V_{CEO}$	300	250	V
Emitter-Base Voltage	$V_{EBO}$	7.0	6.0	V
Continuous Collector Current	$I_C$		150	mA
Power Dissipation	$P_D$		1.0	W
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$		5.0	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		150	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$		30	$^\circ\text{C/W}$

SYMBOL	2N5058	2N5059	UNITS
$V_{CB0}$	300	250	V
$V_{CEO}$	300	250	V
$V_{EBO}$	7.0	6.0	V
$I_C$		150	mA
$P_D$		1.0	W
$P_D$		5.0	W
$T_J, T_{stg}$	-65 to +200		$^\circ\text{C}$
$\theta_{JA}$		150	$^\circ\text{C/W}$
$\theta_{JC}$		30	$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

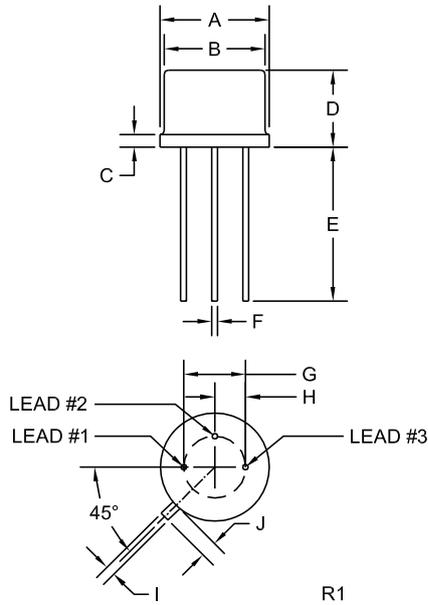
SYMBOL	TEST CONDITIONS	2N5058		2N5059		UNITS
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=100\text{V}$	-	50	-	50	nA
$I_{CBO}$	$V_{CB}=100\text{V}, T_A=125^\circ\text{C}$	-	20	-	20	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$	-	10	-	10	nA
$BV_{CB0}$	$I_C=100\mu\text{A}$	300	-	250	-	V
$BV_{CEO}$	$I_C=30\text{mA}$	300	-	250	-	V
$BV_{EBO}$	$I_E=100\mu\text{A}$	7.0	-	6.0	-	V
$V_{CE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$	-	1.0	-	1.0	V
$V_{BE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$	-	0.85	-	0.85	V
$V_{BE(ON)}$	$V_{CE}=25\text{V}, I_C=30\text{mA}$	-	0.82	-	0.82	V
$h_{FE}$	$V_{CE}=25\text{V}, I_C=5.0\text{mA}$	10	-	-	10	
$h_{FE}$	$V_{CE}=25\text{V}, I_C=30\text{mA}$	35	150	30	150	
$h_{FE}$	$V_{CE}=25\text{V}, I_C=30\text{mA}, T_A=-55^\circ\text{C}$	10	-	-	-	
$h_{FE}$	$V_{CE}=25\text{V}, I_C=100\text{mA}$	35	-	30	-	
$f_T$	$V_{CE}=25\text{V}, I_C=10\text{mA}, f=20\text{MHz}$	30	160	30	160	MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$	-	10	-	10	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$	-	75	-	75	pF

R1 (27-March 2015)

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**TO-39 CASE - MECHANICAL OUTLINE**



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

**LEAD CODE:**

- 1) Emitter
- 2) Base
- 3) Collector

**MARKING: FULL PART NUMBER**

R1 (27-March 2015)

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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

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- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

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